

WHAT IS CLAIMED IS:

1. A variable reluctance sensor for use with an ignition timing device, the variable reluctance sensor comprising:

- a support tube insertable in a bore extending from a first end to a second end;
- a sensor housing insertable in the bore; and
- a variable reluctance probe disposed in the sensor housing.

2. The variable reluctance sensor of claim 1 wherein the support tube includes exterior threads.

3. The variable reluctance sensor of claim 2 wherein the support tube includes interior threads and the sensor housing includes exterior threads adapted to mate with the interior threads.

4. The variable reluctance sensor of claim 1 and further comprising a plurality of variable reluctance probes disposed in the sensor housing.

5. The variable reluctance sensor of claim 1 and further comprising a locking device for securing a position of the support tube relative to the sensor housing.

6. The variable reluctance sensor of claim 5 wherein the locking device comprises a locking nut.

7. A variable reluctance sensor for use with an ignition timing device, the variable reluctance sensor comprising:

a support tube having threads adapted for mating with a threaded aperture in a bore;

a sensor housing adjustably securable to the support tube; and

a variable reluctance probe disposed in the sensor housing.

8. The variable reluctance sensor of claim 7 and further comprising a locking device for securing a position of the support tube relative to the sensor housing.

9. The variable reluctance sensor of claim 8 wherein the locking device comprises a locking nut.

10. The variable reluctance sensor of claim 9 wherein the support tube includes interior threads and the sensor housing includes exterior threads adapted to mate with the interior threads.

11. A combination comprising:

an engine having a timing port in a crankcase and a timing mark indicative of a position of a movable member viewable through the timing port, wherein the timing port includes threads; and

a sensor assembly threadably secured in the timing port and adapted to provide a

timing mark signal indicative of
presence of the timing mark.

12. The combination of claim 11 wherein the sensor assembly comprises a variable reluctance sensor assembly.

13. The combination of claim 12 wherein the variable reluctance sensor assembly comprises:

- a support tube having threads adapted for mating with a threads of the timing port;
- a sensor housing being insertable in the bore; and
- a sensor disposed in the sensor housing.

14. The combination of claim 13 wherein the support tube includes interior threads and the sensor housing includes exterior threads adapted to mate with the interior threads.

15. The combination of claim 14 and further comprising a device for securing a position of the support tube relative to the sensor housing.

16. The combination of claim 15 wherein the device comprises a locking nut.

17. A method of preparing an engine for checking the ignition timing thereof, the engine having a timing port in a crankcase and a timing mark indicative of a position of a movable member viewable through the timing port, wherein the timing port

includes threads, the method comprising:

securing a support tube proximate the timing port; and .

inserting a sensor assembly into the support tube housing and adjustably securing the sensor assembly to the support tube where a sensor is positioned to detect presence of the timing mark through the timing port.

18. The method of claim 17 wherein the timing port includes threads, and wherein securing comprises threading the support tube in the timing port.

19. The method of claim 18 wherein adjustably securing the sensor assembly comprises inserting the sensor assembly through the timing port until contact is made with the movable member followed by retracting the sensor assembly after contact is made.

20. The method of claim 19 wherein the support tube includes inner threads and the sensor assembly includes threads adapted to mate with the inner threads and wherein inserting the sensor assembly comprises threadably mating the inner threads with the threads of the sensor assembly.

21. The method of claim 20 wherein adjustably securing includes engaging a locking device to secure the sensor assembly relative to the support tube.

22. The method of claim 21 wherein adjustably securing comprises engaging a locking nut with the support tube.